

**METHOD OF ETCHING WITH NH<sub>3</sub> AND FLUORINE CHEMISTRIES****ABSTRACT**

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A method of etching a stack using a fluorine containing gas and an ammonia containing gas is provided. Generally, the stack is placed in a plasma processing chamber. A fluorine containing gas is flowed into the plasma processing chamber. An ammonia containing gas is flowed into the plasma processing chamber. A plasma is generated. The stack is then etched.

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In addition, a device for etching stacks on a substrate is provided. The device comprises: a plasma chamber with chamber walls; a plasma confinement device for reducing plasma contact with the chamber walls; a gas source; plasma generation and energizing device; and an exhaust system for pumping plasma away. The gas source comprises a fluorine containing gas source and an ammonia containing gas source.

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